

NXP RTC
 PCA85063
 PCA8565
 PCA21125
 PCA2129

Real-time clocks for automotive applications

In automotive applications, exposure to extreme temperatures presents a serious challenge to accurate timing. NXP has the solution.

PCA85063A NEW

- ▶ -40 to +105 °C
- ▶ Interface: I²C-bus, 400 kHz
- ▶ Low power consumption < 300 nA
- ▶ For dashboards and infotainment systems
- ▶ For accurate and consistent timing

PCA8565

- ▶ -40 to +125 °C
- ▶ Interface: I²C-bus, 400 kHz
- ▶ For battery management
- ▶ For engine and motor control
- ▶ For critical applications

PCA21125

- ▶ -40 to +125 °C
- ▶ SPI-bus, 6 MHz
- ▶ For battery management
- ▶ For engine and motor control
- ▶ For critical applications

PCA2129

- ▶ -40 to +125 °C
- ▶ I²C-bus, 400 kHz & SPI-bus, 6.5 MHz
- ▶ For dashboards and infotainment systems
- ▶ High timing accuracy via temperature-compensated oscillator
- ▶ All clocks are exact and synchronous

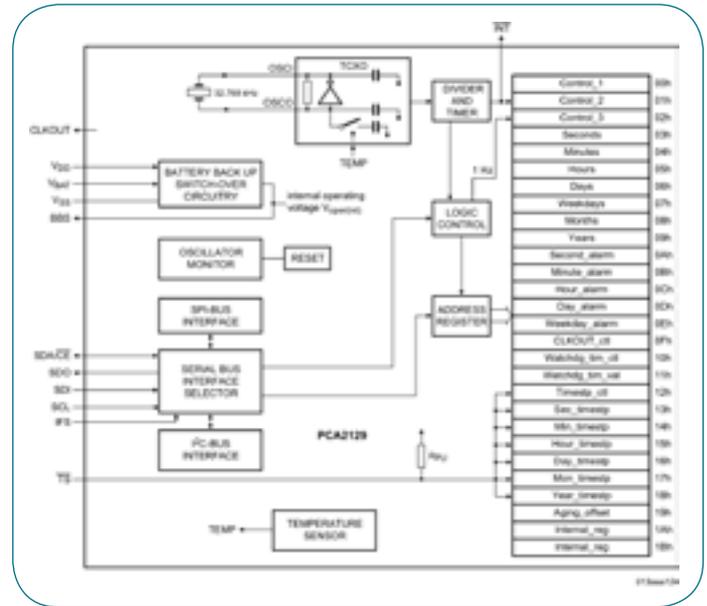
Application	PCA85063	PCA8565	PCA21125	PCA2129T
Dashboard / infotainment	Ideal fit	Good fit	Good fit	Ideal fit
Battery charging	Good fit	Ideal fit	Ideal fit	Good fit
System timing	Ideal fit	Ideal fit	Ideal fit	Ideal fit
Accurate time distribution	Good fit			Ideal fit
Temperature range	-40 to +105 °C	-40 to +125 °C	-40 to +125 °C	-40 to +85 °C
AEC-Q100 grade	2	1	1	3



Our real-time clocks (RTCs) offer superior performance in critical automotive applications

- ▶ Consistent timing
- ▶ Independent timer
- ▶ Independent watchdog function for system supervision
- ▶ Periodic interrupts to initiate processes
- ▶ Alarm function with interrupt
- ▶ Complete date and time from seconds to years
- ▶ Time-stamping events, independent of microcontroller
- ▶ Timing under severe conditions, e.g. up to +125 °C
- ▶ Electric tuning, with no external capacitors needed for PCA85063 and PCA2129
- ▶ Highly accurate and uninterrupted time tracking using temperature-compensated quartz oscillator and battery backup system
- ▶ Oscillator optimized for quartz crystals in automotive-grade ceramic package
- ▶ Interfaces to I²C and/or SPI bus

PCA2129 block diagram



OM13513 evaluation board for PCA2129T



OM13515 evaluation board for PCA85063



Automotive RTC selection guide

Product number	PCA85063AT	PCA8565TS	PCA21125TS	PCA2129T
Interface	I ² C-bus	I ² C-bus	SPI	SPI, I ² C-bus
Temperature range	-40 to +105 °C	-40 to +125 °C	-40 to +125 °C	-40 to +85 °C
Special feature	Low power	Very wide temperature range	Very wide temperature range	High timing accuracy
Demo board*	OM13515			OM13513
User manual	UM10788			UM10762
Package	TSSOP8	TSSOP8	TSSOP14	SO161

* The I²C-bus demo boards are supported by the I²C-bus USB dongle OM13518 (User Manual UM10789)

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